

IN THE CLAIMS

The status of each claim is provided below.

Claims 1-28: Canceled.

29. (New) An isolated DNA sequence encoding a protein, wherein the protein is capable of modulating DNA replication in plant cells and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

30. (New) The DNA sequence of Claim 29, wherein the protein contains an intact TRP domain.

31. (New) The DNA sequence of Claim 29, wherein the protein comprises a NH₂-terminal domain conserved in cdc27 homologues of different origin, wherein the NH₂-terminal domain comprises a stretch of 161 NH₂-terminal amino acids, and wherein the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

32. (New) The DNA sequence of Claim 31, wherein the protein promotes APC-substrate action and allows DNA replication.

33. (New) The DNA sequence of Claim 31, wherein the protein occupies the binding region of the APC complex and inhibits the complex-substrate interactions.

34. (New) The DNA sequence of Claim 31, wherein the stretch comprises SEQ ID NO: 6.

35. (New) The DNA sequence of Claim 31, wherein the stretch comprises an amino acid sequence having more than 60% sequence identity to SEQ ID NO: 6.

36. (New) The DNA sequence of Claim 31, wherein the stretch comprises an amino acid sequence having more than 70% sequence identity to SEQ ID NO: 6.

37. (New) The DNA sequence of Claim 31, wherein the stretch comprises an amino acid sequence having more than 80% sequence identity to SEQ ID NO: 6.

38. (New) The DNA sequence of Claim 31, wherein the stretch comprises an amino acid sequence having more than 90% sequence identity to SEQ ID NO: 6.

39. (New) The DNA sequence of Claim 31, wherein the stretch comprises an amino acid sequence having more than 95% sequence identity to SEQ ID NO: 6.

40. (New) The DNA sequence of Claim 31, wherein the stretch comprises an amino acid sequence having more than 98% sequence identity to SEQ ID NO: 6.

41. (New) The DNA sequence of Claim 31, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 has at least 75% homology to nucleotides 109-181 of SEQ ID NO: 9.

42. (New) The DNA sequence of Claim 31, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 has at least 80% homology to nucleotides 109-181 of SEQ ID NO: 9.

43. (New) The DNA sequence of Claim 31, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 has at least 90% homology to nucleotides 109-181 of SEQ ID NO: 9.

44. (New) The DNA sequence of Claim 31, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 has at least 95% homology to nucleotides 109-181 of SEQ ID NO: 9.

45. (New) The DNA sequence of Claim 31, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 is nucleotides 109-181 of SEQ ID NO: 9.

46. (New) The DNA sequence of Claim 31, which is in the form of a vector.

47. (New) The DNA sequence of Claim 46, wherein the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

48. (New) The DNA sequence of Claim 46, wherein the vector comprises a nematode-induced promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

49. (New) A method of modulating plant cell division, comprising transforming plant cells with an isolated DNA sequence encoding a protein which is capable of modulating DNA replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

50. (New) The method of Claim 49, wherein the DNA sequence is in the form of a vector, and the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

51. (New) A method of modulating the growth of plant cells, comprising transforming plant cells with an isolated DNA sequence encoding a protein which is capable of modulating DNA replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

52. (New) The method of Claim 51, wherein the DNA sequence is in the form of a vector, and the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

53. (New) A method of modulating DNA replication, comprising transforming plant cells with an isolated DNA sequence encoding a protein which is capable of modulating

DNA replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

54. (New) The method of Claim 53, wherein the DNA sequence is in the form of a vector, and the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

55. (New) A method of producing transgenic plant cells, comprising transforming plant cells with an isolated DNA sequence encoding a protein which is capable of modulating DNA replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

56. (New) The method of Claim 55, wherein the DNA sequence is in the form of a vector, and the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

57. (New) The method of Claim 56, further comprising:
culturing the plant cells in order to regenerate plant parts or plants from the transplanted cells, or
incubating the cells at conditions allowing expression of said DNA to produce said protein.

58. (New) A method of producing transgenic plants, comprising transforming plants with an isolated DNA sequence encoding a protein which is capable of modulating DNA

replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

59. (New) The method of Claim 58, wherein the protein contains an intact TRP domain.

60. (New) The method of Claim 58, wherein the protein comprises a NH₂-terminal domain conserved in cdc27 homologues of different origin, wherein the NH₂-terminal domain comprises a stretch of 161 NH₂-terminal amino acids, and wherein the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

61. (New) The method of Claim 60, wherein the protein promotes APC-substrate action and allows DNA replication.

62. (New) The method of Claim 60, wherein the protein occupies the binding region of the APC complex and inhibits the complex-substrate interactions.

63. (New) The method of Claim 60, wherein the stretch comprises SEQ ID NO: 6.

64. (New) The method of Claim 60, wherein the stretch comprises an amino acid sequence having more than 60% sequence identity to SEQ ID NO: 6.

65. (New) The method of Claim 60, wherein the stretch comprises an amino acid sequence having more than 70% sequence identity to SEQ ID NO: 6.

66. (New) The method of Claim 60, wherein the stretch comprises an amino acid sequence having more than 80% sequence identity to SEQ ID NO: 6.

67. (New) The method of Claim 60, wherein the stretch comprises an amino acid sequence having more than 90% sequence identity to SEQ ID NO: 6.

68. (New) The method of Claim 60, wherein the stretch comprises an amino acid sequence having more than 95% sequence identity to SEQ ID NO: 6.

69. (New) The method of Claim 60, wherein the stretch comprises an amino acid sequence having more than 98% sequence identity to SEQ ID NO: 6.

70. (New) The method of Claim 60, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 has at least 75% homology to nucleotides 109-181 of SEQ ID NO: 9.

71. (New) The method of Claim 60, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 has at least 80% homology to nucleotides 109-181 of SEQ ID NO: 9.

72. (New) The method of Claim 60, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence

identity to SEQ ID NO: 6 has at least 90% homology to nucleotides 109-181 of SEQ ID NO: 9.

73. (New) The method of Claim 60, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 has at least 95% homology to nucleotides 109-181 of SEQ ID NO: 9.

74. (New) The method of Claim 60, wherein the sequence which codes for the stretch comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6 is nucleotides 109-181 of SEQ ID NO: 9.

75. (New) The method of Claim 60, wherein the DNA sequence is in the form of a vector.

76. (New) The method of Claim 75, wherein the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

77. (New) The method of Claim 75, wherein the vector comprises a nematode-induced promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

78. (New) A method of producing transgenic plant tissue, comprising transforming plant tissue with an isolated DNA sequence encoding a protein which is capable of

modulating DNA replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

79. (New) The method of Claim 78, wherein the DNA sequence is in the form of a vector, and the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

80. (New) A method of modifying the characteristics of plant cells, comprising transforming plant cells with an isolated DNA sequence encoding a protein which is capable of modulating DNA replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

81. (New) The method of Claim 80, wherein the DNA sequence is in the form of a vector, and the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

82. (New) A method of modifying the characteristics of plants, comprising transforming plants with an isolated DNA sequence encoding a protein which is capable of modulating DNA replication and comprises SEQ ID NO: 6 or an amino acid sequence having more than 50% sequence identity to SEQ ID NO: 6.

83. (New) The method of Claim 82, wherein the DNA sequence is in the form of a vector, and the vector further comprises a promoter operably linked to the DNA, wherein the promoter is functional in plant cells.

84. (New) A plant cell transformed with the DNA sequence of Claim 29.
85. (New) A plant transformed with the DNA sequence of Claim 29.
86. (New) A progeny of the plant of Claim 85.
87. (New) A plant cell transformed with the vector of Claim 46.
88. (New) A plant transformed with the vector of Claim 46.
89. (New) A progeny of the plant of Claim 88.
90. (New) A plant material obtained from the plant of Claim 85.
91. (New) The plant material of Claim 90, which is one or more selected from the group consisting of roots, flowers, fruit, leaves, pollen, seeds, seedlings and tubers.
92. (New) A plant material obtained from the plant of Claim 88.
93. (New) The plant material of Claim 92, which is one or more selected from the group consisting of roots, flowers, fruit, leaves, pollen, seeds, seedlings and tubers.
94. A plant cell obtained by the method of Claim 49.
95. A plant cell obtained by the method of Claim 50.

96. A plant cell obtained by the method of Claim 51.

97. A plant cell obtained by the method of Claim 52.

98. A plant cell obtained by the method of Claim 53.

99. A plant cell obtained by the method of Claim 54.

100. A plant cell obtained by the method of Claim 55.

101. A plant cell obtained by the method of Claim 56.

102. A plant cell obtained by the method of Claim 57.

103. A plant cell obtained by the method of Claim 58.

104. A plant cell obtained by the method of Claim 59.

105. A plant cell obtained by the method of Claim 60.

106. A plant cell obtained by the method of Claim 61.

107. A plant cell obtained by the method of Claim 62.

- 108. A plant cell obtained by the method of Claim 63.
- 109. A plant cell obtained by the method of Claim 64.
- 110. A plant cell obtained by the method of Claim 65.
- 111. A plant cell obtained by the method of Claim 66.
- 112. A plant cell obtained by the method of Claim 67.
- 113. A plant cell obtained by the method of Claim 68.
- 114. A plant cell obtained by the method of Claim 69.
- 115. A plant cell obtained by the method of Claim 70.
- 116. A plant cell obtained by the method of Claim 71.
- 117. A plant cell obtained by the method of Claim 72.
- 118. A plant cell obtained by the method of Claim 73.
- 119. A plant cell obtained by the method of Claim 74.
- 120. A plant cell obtained by the method of Claim 75.

121. A plant cell obtained by the method of Claim 76.

122. A plant cell obtained by the method of Claim 77.

123. A plant cell obtained by the method of Claim 78.

124. A plant cell obtained by the method of Claim 79.

125. A plant cell obtained by the method of Claim 80.

126. A plant cell obtained by the method of Claim 81.

127. A plant cell obtained by the method of Claim 82.

128. A plant cell obtained by the method of Claim 83.

SUPPORT FOR THE AMENDMENTS

Newly-added Claims 29-128 are supported by the specification at pages 3-42 and original Claims 1-28. Accordingly, no new matter is believed to be added to the present application by the amendments submitted above.